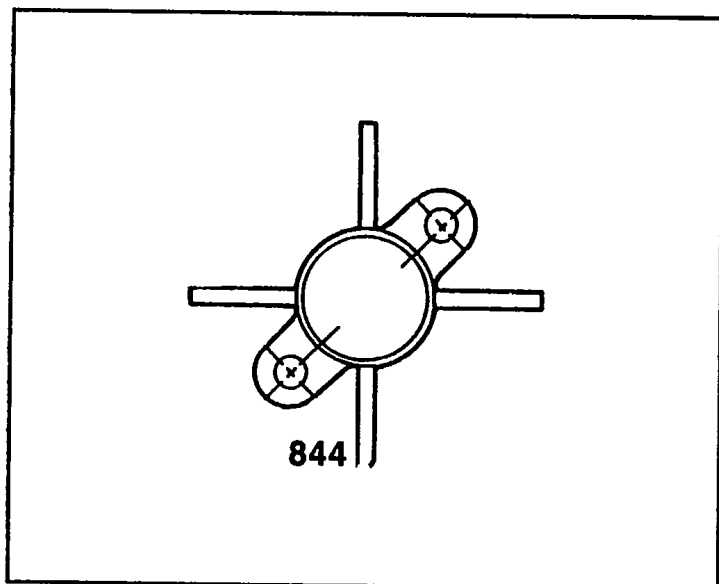


MA8334 Series

RF Multithrow PIN Diode Switch Modules



Description

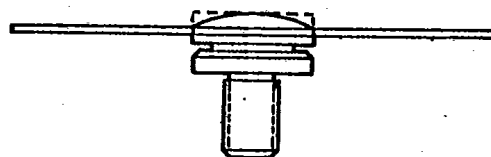
M/A-COM's MA8334 series Multithrow Switch Modules are SP2T and SP3T switches designed for use from 20 MHz to 1000 MHz. They are rated to handle 10, 100 or 1000 watts CW RF power.

These switch modules are constructed using advanced hybrid technology and utilize PIN diode chips distinguished by their low loss and high reliability. The 1000 watt switch modules employ M/A-COM's Cermachip PIN diodes.

Applications of the MA8334 switch modules include TR antenna switches, and diversity switches. The semiconductor elements have been selected for low distortion performance.

Features

- SP2T AND SP3T DESIGNS
- HIGH POWER CAPABILITY (UP TO 1 KW OF CW)
- LOW DISTORTION
- HIGH RELIABILITY
- FREQUENCY RANGE FROM 10 MHz TO 1 GHz
- LOW INSERTION LOSS
- HIGH ISOLATION



Model Number	Case Style	Maximum ⁵ CW Input Power (Watts)	Switch ⁶ Type	Frequency ⁴ Range (MHz)	Minimum ^{1,2,3} Isolation (dB)	Maximum ^{1,2,3} Insertion Loss (dB)	Diode Voltage Rating (Volts)
MA8334-100	506	10	SP2T	20-600	25	.35	250
MA8334-101	506	10	SP2T	20-600	25	.35	250
MA8334-001	844	100	SP2T	20-1000	24	.35	900
MA8334-004	844	100	SP3T	20-1000	24	.35	900
MA8334-200	946	1000	SP2T	20-200	24	.20	1000

NOTES:

- For the MA8334-1000 and MA8334-101 the isolation and insertion loss is specified at 450 MHz with the "ON" branch forward biased at 20 mA and the "OFF" branch at zero bias.
- For the MA8334-001 and the MA8334-004 the isolation and insertion loss is specified at 450 MHz with the "ON" branch forward biased at 50 mA and the "OFF" branch at zero bias.
- For the MA8334-200 the isolation and insertion loss is specified at 100 MHz with the "ON" branch forward biased at 600 mA and the "OFF" branch is reversed biased at 400 volts.
- Maximum SWR for all switches is 1.35 at specified frequency.
- Nominal thermal resistance is 100 C/W per diode for 10 watt switches, 10 C/W per diode for 100 watt switches and 3 C/W per diode for 1000 watt switches.
- Other configurations available upon request.

ABSOLUTE MAXIMUM RATINGS

TEMPERATURE

	STORAGE	OPERATING
10 watt switch	-65°C to +150°C	-55°C to +150°C
100 watt switch	-65°C to +125°C	-55°C to +100°C
1000 watt switch	-65°C to +150°C	-55°C to +150°C

POWER

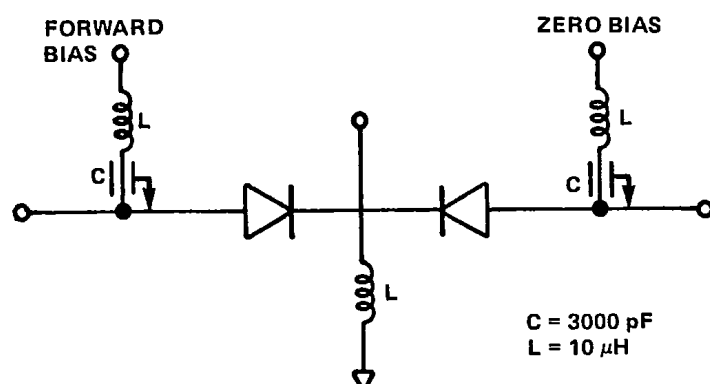
Power rating derated to zero watts at maximum operating temperature.

VOLTAGE

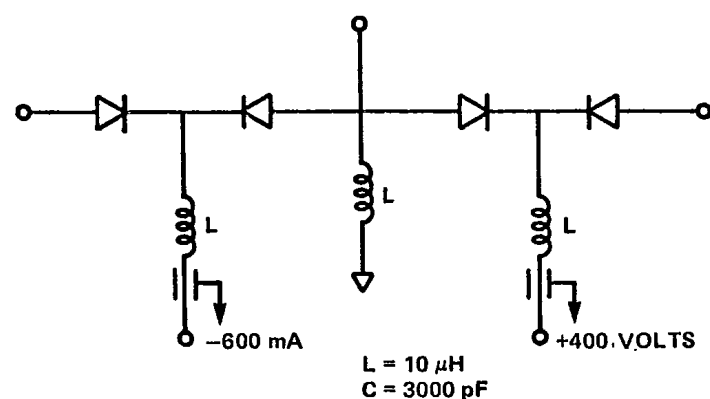
Voltage Rating

Application Notes

APPLICATIONS CIRCUITS

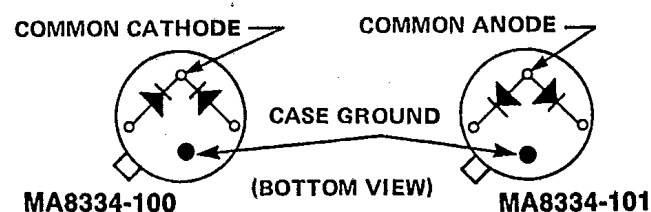
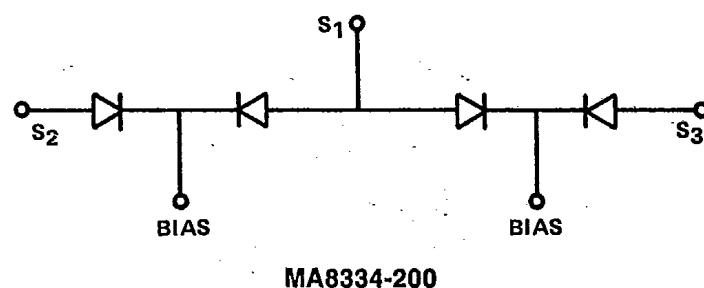
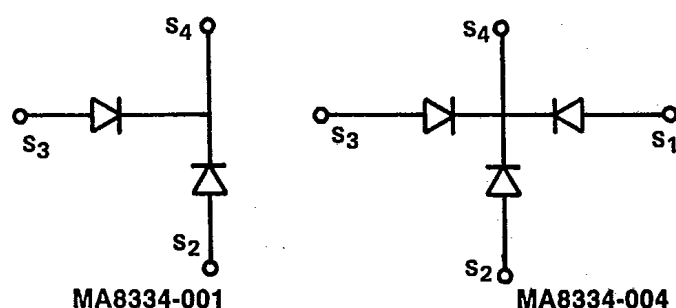


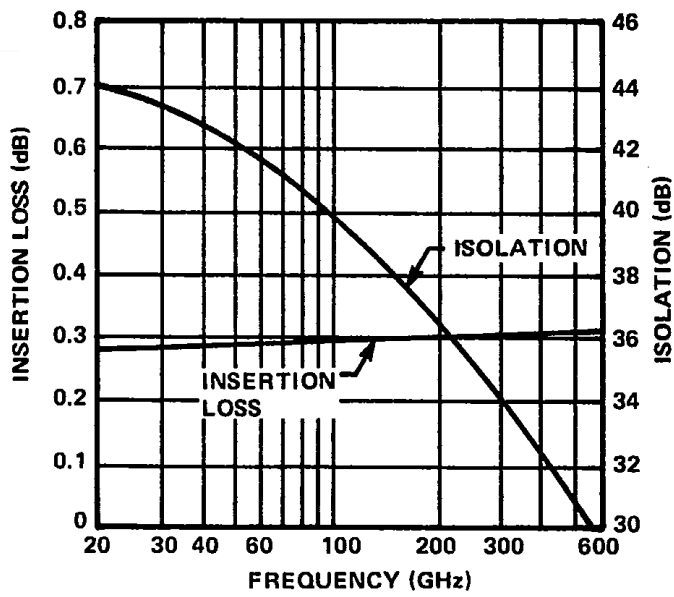
Suggested Bias Circuit for 10 Watt and 100 Watt SP2T Switches



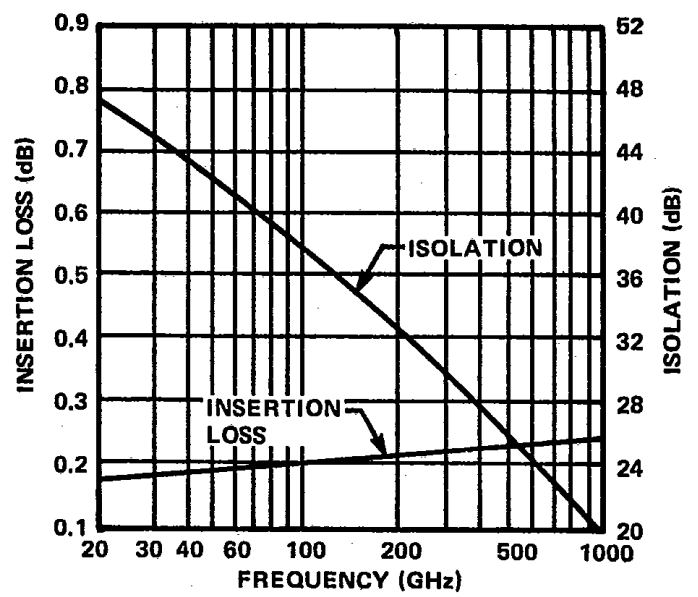
Suggested Bias Circuit for 1000 Watt Switch

INTERNAL WIRING DIAGRAMS

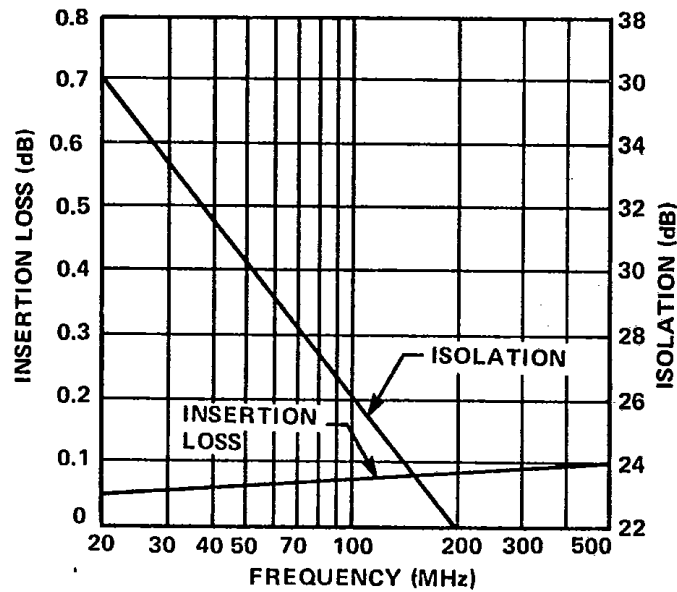




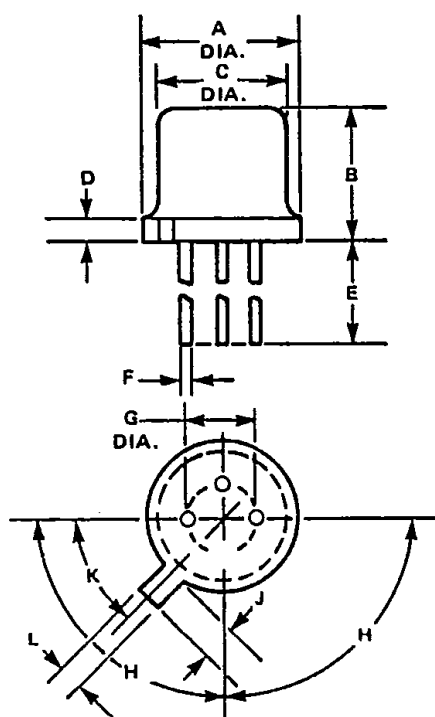
Typical Isolation and Insertion Loss vs. Frequency for 10 Watt Switches



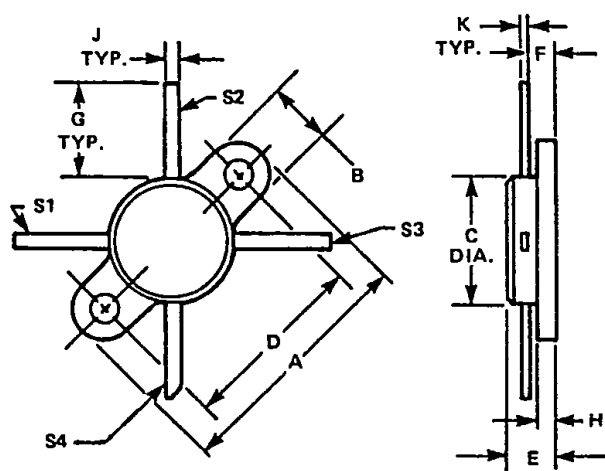
Typical Insertion Loss and Isolation vs. Frequency for 100 Watt Switches



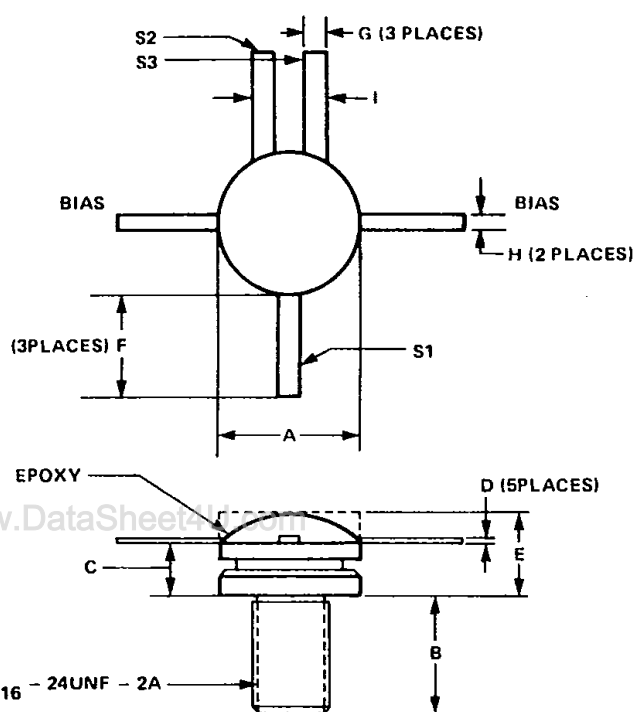
Typical Insertion Loss and Isolation vs. Frequency for 1 kW Switch



DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.350	0.370	8,89	9,40
B	0.240	0.260	6,11	6,60
C	0.315	0.335	8,00	8,51
D	— —	0.040	— —	1,02
E	0.500	— —	12,70	— —
F	0.016	0.021	0,41	0,53
G	0.190	0.210	4,83	5,33
H	89°	91°	89°	91°
J	0.029	0.043	0,74	1,09
K	43°	47°	43°	47°
L	0.028	0.034	0,71	0,86



DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.970	0.980	24,64	24,89
B	0.240	0.260	6,10	6,60
C	0.460	0.500	11,68	12,70
D	0.720	0.730	18,29	18,54
E	0.250	0.290	6,35	7,37
F	0.150	0.190	3,81	4,83
G	0.350	0.390	8,89	9,91
H	0.080	0.120	2,03	3,05
J	0.045	0.055	1,14	1,40
K	0.010	— —	0,25	— —



DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	.740	.760	18,80	19,30
B	.552	.577	14,02	14,65
C	.210	.220	5,33	5,59
D	.007	.014	0,17	0,35
E	— —	.155	— —	3,93
F	.485	.750	12,31	19,05
G	.095	.110	2,41	2,80
H	.035	.045	0,90	1,14
I	.305	.345	7,74	8,77